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THE AEROSPACE CORPORATION



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20 August 1985

bcc: A. Wallo  
F. Hoch (w/o)  
F. Newman (w/o)  
R. Johnson (w/o)

Mr. Arthur Whitman  
Division of Remedial Action Projects, NE-24  
U.S. Department of Energy  
Germantown, Maryland 20545

Dear Mr. Whitman:

AUTHORITY REVIEW FOR THE  
FORMER STATEN ISLAND WAREHOUSE

Aerospace has completed the analysis of the available documentation related to the former Staten Island Warehouse. The attachment is submitted for your review to determine whether DOE has authority to pursue remedial action at the site under FUSRAP.

As indicated in the summary of the attached analysis, it would appear that, except for export controls imposed by the State Department, the ore stored in the former Staten Island Warehouse was not under the control of the U.S. Government. The Manhattan District only purchased a portion of the U<sub>3</sub>O<sub>8</sub> content of the ore, while African Metals Corporation retained ownership of the radium and other precious metals that remained in the ore after processing. Further, the U.S. Government did not take custody of the ore until delivered by lighter free alongside ship to the Lehigh Valley Railroad at the Dean Mill Plant of the Archer-Daniels-Midland Company. As a result, it does not appear that DOE has authority under the Atomic Energy Act to take remedial actions, if needed, at this site.

Based upon your review and final authority determination, Aerospace will prepare an elimination package to document the status of the site as it is turned over to the EPA for remedial action.

Please call me with any questions you might have on the attached authority review package.

Sincerely,

Edmund A. Vierzba  
Technology Impacts Directorate  
Government Support Division

EAV/smb

cc: E. DeLaney  
S. Miller  
D. Shaw (w/o)  
Whitman file



An Affirmative Action Employer

GENERAL OFFICES LOCATED AT: 2350 EAST EL SEGUNDO BOULEVARD, EL SEGUNDO, CALIFORNIA

AUTHORITY REVIEW  
THE FORMER STATEN ISLAND WAREHOUSE  
(ARCHER DANIELS MIDLAND COMPANY)  
PORT RICHMOND, NEW YORK

INTRODUCTION

The purpose of this review is to present information on the known use of the former Staten Island Warehouse by African Metals Corporation to store high-grade uranium ore (pitchblende) from which the MED later contracted to extract uranium. Based on this information, a determination will be made by the Department of Energy as to whether there is authority to conduct remedial actions associated with the removal or stabilization of contaminated soils on the property.

The principal sources of information available for this review are:

- a. Hewlett, Richard G., and Oscar E. Anderson, Jr.. A History of the United States Atomic Energy Commission; Volume I: The New World, 1939/1946; The Pennsylvania State University Press, University Park, PA, 1962.
- b. Groves, Leslie R., Now It Can Be Told; The Story of the Manhattan Project, New York, 1962
- c. Manhattan District History; Book VII: Feed Materials Production and Geographical Exploration; Volume I: Feed Materials and Special Procurement, 1947
- d. Contract W-7405-eng-4 signed by Col. Nichols and Mr. Edgar Sengier on October 19, 1942.
- e. Miscellaneous correspondence

BACKGROUND

In 1940, Edgar Sengier, the Belgian managing director of Union Miniere du Haut Katanga, ordered that the high-grade uranium ore previously mined at the Shinkolobwe Mine in the Belgian Congo be imported to the USA to be sold through Union Miniere's American affiliate, African Metals Corporation. The 1200 tons of 65% U<sub>3</sub>O<sub>8</sub> ore was transferred from the port of Lobito in Portuguese Angola and stored in 2007 steel drums in the Staten Island Warehouse owned by the Archer-Daniels-Midland Company. The warehouse was located at the east foot of the Bayonne Bridge at 2393 Richmond Terrace, Port Richmond, Staten Island, New York. The reported purpose of importing the ore was to prevent its falling into enemy hands.

In August 1942, Eldorado Gold Mines, Ltd., in Ontario attempted to import from the USA 500 tons of the ore stored on Staten Island. Upon notification by the S-1 Committee of the Office of Scientific Research and Development (OSRD), the Army arranged through the State Department to place export controls on the Belgian ore in September 1942. On 18 September 1942, Colonel Kenneth D. Nichols met with Edgar Sengier and arrived at a verbal agreement for African Metals to give the U.S. Government the right of first refusal on the sale of all the available ore. By the end of September, Colonel Nichols had arranged for 100 tons to be shipped to Eldorado's Port Hope Refinery, Canada, and the remainder to be shipped to the Seneca Ordnance Depot for safekeeping under custody of the U.S. Government. The verbal agreement was formalized on 19 October 1942 with Contract No. W-7405-eng-4. Only the uranium content of the Staten Island ore was purchased. Because the Eldorado Refinery could not be expected to recover more than 80% of the  $U_3O_8$ , the Government only contracted for 80% of the  $U_3O_8$  content. Under Contract W-7405-eng-24, dated 8 December 1942, the Government agreed to pay for 85% of the uranium contained in the remaining 1100 tons of 65% ore. The first 100 tons was reportedly moved by lighter of the Lehigh Valley Railroad for shipment to Port Hope for refining by the Eldorado Mining Company. The U.S. Government took custody of the ore "when delivered f.a.s. (free alongside ship) lighters (barges) of the Lehigh Valley Railroad at the Dean Mill Plant of the Archer-Daniels-Midland Company."

#### RADIOLOGICAL HISTORY AND STATUS

The Oak Ridge Operations Office of the Energy Research and Development Administration conducted a visual inspection of the site in 1976 and verified the status of the site. In 1980, the Department of Energy requested that the Oak Ridge National Laboratory conduct a preliminary radiological survey of the site. A 20 by 40 meter area on the northwest corner of the site was found to be contaminated with what may be high-grade Belgian ore. The contamination appears to be localized in a 6 cm layer, 35-40 cm below the surface. Samples showed uranium-238 concentrations of up to 660 pCi/g and radium-226 concentration of up to 590 pCi/g. Localized gamma exposure rates on the surface were measured up to 0.2 mR/h (20 times background); below the surface, higher levels, up to 0.4 mR/h, were found.

#### SITE DESCRIPTION

The warehouse, clearly identified on Chart 67 of the Port Facilities of New York, dated 15 May 1942 appears in U.S. Coast and Geodetic Survey aerial photographs dated 23 December 1943 but not in photographs dated 16 June 1946. No records have been found that indicate the disposition of the debris from the warehouse.

The site is presently unoccupied and is used as a tractor-trailer parking lot.

## OWNER

At the time of its use for uranium ore storage, the warehouse was owned by the Archer-Daniels-Midland Company. The site is now owned by the RHS Realty Corporation (last confirmed on 18 June 1980).

## AUTHORITY ANALYSIS

The determination of authority for remedial action at a candidate FUSRAP site is based upon an evaluation of the specific terms of the contract or contracts between MED/AEC and their contractors; confirmation that the residual radioactive contamination at the site did occur during the performance of work sponsored by the MED/AEC; and the working relationship between MED/AEC and their contractors. The latter considerations specifically address ownership of facilities and equipment, control of contractor operations, and MED/AEC involvement in matters pertaining to health and safety at the facilities.

The results of this review of available documentation and evaluation of factors cited above to determine DOE's authority for remedial action at the former Staten Island Warehouse facility are addressed in responses to the questions that follow:

a. Was the site/operation owned by a DOE predecessor or did a DOE predecessor have significant control over the operations on the site?

Response: The ore was owned by Union Miniere and the warehouse was rented by African Metals Corporation. The government's first involvement was the State Department's placing of export controls on the ore in September of 1942 followed by the Manhattan District's purchase of 80-85% of the uranium content of the ore over two years after the ore's arrival on the site.

b. Was a DOE predecessor agency responsible for maintaining or ensuring the environmental integrity of the site (i.e., were they responsible for cleanup)?

Response: No. The U.S. Government only purchased 80-85% of the uranium content. Correspondence indicates that the U.S. Government took custody of the ore "when delivered f.a.s. lighters of the Lehigh Valley Railroad at the Dean Mill Plant of the Archer-Daniels-Midland Company."

c. Is the waste, residue, or radioactive material on the site the result of DOE predecessor-related operation?

Response: It cannot be determined whether the spill occurred during the ore's arrival at the site under Union Miniere's direction or during their removal from the site by African Metals under the terms of the contract.

d. Is the site in need of further cleanup and was the site left in non-acceptable condition as a result of DOE predecessor related activity?

Response: The results of the 1980 radiological survey by the Oak Ridge National Laboratory indicated that a portion of the site is contaminated with natural uranium and radium as would be found in in ore. (It cannot be determined from the preliminary radiological survey whether the contamination is above applicable guidelines.) The apparent spill cannot be traced with certainty to actions carried out by DOE predecessors or their contractors.

e. Did the present owner accept responsibility for the site with knowledge of its contaminated condition and that additional remedial measures would be needed to make the site acceptable for unrestricted use by the general public?

Response: No records have been found which would indicate that the site was known to be contaminated until the ORNL preliminary radiological survey in 1980.

#### Summary

The Department of Energy does not have authority under the Atomic Energy Act to pursue remedial action at the former Staten Island Warehouse site in that the Manhattan District purchased only the majority of the uranium content of the ore and, further, did not have custody of the ore on the site.

## REFERENCES

The following published references are available for information relative to the site:

- o Hewlett, Richard G., and Oscar E. Anderson, Jr.. A History of the United States Atomic Energy Commission; Volume I: The New World, 1939/1946; The Pennsylvania State University Press, University Park, PA, 1962.
- o Groves, Leslie R., Now It Can Be Told; The Story of the Manhattan Project, New York, 1962
- o U.S. Department of Energy, A Background Report for the Formerly Utilized Manhattan Engineer District/Atomic Energy Commission Sites Program, DOE/EV-0097A, September 1980
- o Manhattan District History; Book VII: Feed Materials, Special Procurement, and Geographical Exploration; Volume I: Feed Materials and Special Procurement, 1945

Unpublished contracts and correspondence related to the Belgian ore stored in the Staten Island Warehouse include:

- o Contract No. W-7405-eng-4, 19 October 1942. (Secret)
- o Contract No. W-7405-eng-24, 16 October 1942. (Secret)
- o Letter from E. Sengier, African Metals Corporation, to Thomas K. Finletter, Department of State, providing detailed content of the warehouse, 24 March 1942.
- o Letter from C.S. Cressy, African Metals Corporation, to William Thornton, Energy Research and Development Agency, stating method of shipment from the Staten Island Warehouse, 19 July 1976.
- o Letter from W.E. Kelley, Major, Corps of Engineers to Col. K.D. Nichols, "Production Audit Provision in Contract No W-7405-eng-4 with African Metals," stating terms of the contract, 4 June 1945.
- o Report by Captain J.R. Ruhoff of the Corps of Engineers, 17 September 1942, indicating African Metals Corporation's desire to retain ownership of the ore.
- o Letter from Thomas T. Crenshaw, Major, Corps of Engineers to Lt. Colonel K.D. Nichols, 15 October 1942, discussing shipping arrangements.

- o Letter from J. Cressy, President African Metals Corporation, to Major Thomas T. Crenshaw, Manhattan District, 11 December 1942, mentioning location of delivery of ore.

The following charts and aerial photographs are useful in identifying the Staten Island Warehouse site and in verifying its status in time:

- o Chart: "Port Facilities at Port of New York," No. 67: N.Y. and N.J. Channels: Arthur Kill - Kill Van Kull, U.S. Government Printing Office, 1942 O-501293 -- shows the location of the Archer-Daniels-Midland Company Warehouse.
- o Aerial Photographs: C+GS20, NY 41° 74°, No. 10 (and 19), 1223 43C328 (and 43C327) -- show the warehouse and other facilities on the wharf.
- o Aerial Photographs: C+GS 1:124 NY (and NJ), 40° 74°, 12:35 EST, 6:16 46 C310 (and C311) - show the warehouse has been removed.